UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF THE INSPECTOR GENERAL
OFFICE OF INVESTIGATIONS
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ATLANTA, GA 30303

CLOSING REPORT OF INVESTIGATION CONCERNING

(b) (6), (b) (7)(C) GS-13, (b) (6), (b) (7)(C)
OI-AT-2014-ADM-0110

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US Environmental Protection Agency

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With Attachments

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CASE NO.: OI-AT-2014-ADM-0110 DATE OPENED: August 5, 2014

CASE TITLE: (b) (6), (b) (7)(C) LAST UPDATED: July 14, 2015

CASE CATEGORY: LAB FRAUD CASE AGENT: (b) (6), (b) (7)(C)

JOINT AGENCIES: N/A OFFICE: ATLANTA, GA

JURISDICTION: MIDDLE DISTRICT, GEORGIA

SECTION A - NARRATIVE

INTRODUCTION

(b) (6), (b) (7)(C) disclosed information indicating that sometime during July 2014, (b) (6), (b) (7)(C) , had manipulated a daily Continuing Calibration Verification (CCV) standard's response for benzo(b)fluoranthene to get it to pass the quality assurance (QA) requirement. In essence, (b) (6), (b) (7)(C) falsified data indicating (b) (6), (instrument was operating properly. (Exhibit 1)

The OIG OI determined there were two possible criminal and/or administrative allegations that required investigation:

1. (b) (6), (b) (7)(C) made false statements by manipulating data to ensure samples passed quality control criteria in 2012 and 2014, in violation of 18 U.S.C. § 1001; and
2. (b) (6), (b) (7)(C) manipulated data to ensure samples passed quality control criteria in 2012 and 2014 in violation of EPA order 3120.1 subpart 45.

Possible violations:

18 U.S. Code § 1001 - Statements or entries generally

(a) Except as otherwise provided in this section, whoever, in any matter within the jurisdiction of the executive, legislative, or judicial branch of the Government of the United States, knowingly and willfully—

(1) falsifies, conceals, or covers up by any trick, scheme, or device a material fact;

(2) makes any materially false, fictitious, or fraudulent statement or representation; or
(3) makes or uses any false writing or document knowing the same to contain any materially false, fictitious, or fraudulent statement or entry;

shall be fined under this title, imprisoned not more than 5 years or, if the offense involves international or domestic terrorism (as defined in section 2331), imprisoned not more than 8 years, or both. If the matter relates to an offense under chapter 109A, 109B, 110, or 117, or section 1591, then the term of imprisonment imposed under this section shall be not more than 8 years.

EPA Order 3120.1 Conduct and Discipline

16. Deliberate misrepresentation, falsification, concealment or withholding of a material fact, or refusal to testify or cooperate in an official proceeding;

27. Forging or falsifying official Government records or documents;

45. Scientific Misconduct

Scientific activities include research and development, technical and regulatory support, monitoring, data collection, review and interpretation of technical studies and assessment of health and environmental risk. EPA's scientific activities include the review and interpretation of technical studies and assessment within program offices. The nature of the task, not the job classification of the individual performing the work, determines whether a particular activity is "science." Scientific misconduct does not extend to the interpretation of accurately stated scientific information, even when such interpretation is not widely accepted.

a. Fabrication or knowing falsification of data, research procedures, or data analysis. (Exhibit 2)

IMPACT/DOLLAR LOSS

Approximately $47,000. (Exhibit 3)

SYNOPSIS

The U.S. Attorney's Office, Middle District of Georgia, declined prosecution [redacted]

Administratively, the allegations of falsifying government records or documents and scientific misconduct were supported by the facts uncovered during the investigation. Additionally, [redacted] misrepresented [redacted] actions during the official proceedings investigating the 2012 and 2014 data incidents.

In August, September, and October 2012, [redacted] created materially false EPA records related to the [redacted] hazardous waste site [redacted] by deliberately falsifying laboratory data. The falsified data, had it not been discovered during secondary review, would have rendered the laboratory data indefensible and may have negatively impacted decisions made to remediate the site. As a result of [redacted] falsification, EPA was required to re-collect, re-process and re-analyze the results, incurring an additional $40,000 in cost.

In July 2014, [redacted] created materially false EPA records related to the [redacted] by deliberately falsifying laboratory data. The falsified data, had it not been discovered during secondary review, would have rendered the laboratory data indefensible and may have negatively impacted decisions made to remediate the site. As a result of [redacted] falsification, EPA was required to re-process and re-analyze the results, incurring an additional $6,700 in cost.

During the voluntary interview with EPA OIG agents, [redacted] repeatedly maintained that [redacted] did not alter any data from either the 2012 or 2014 data incidents despite significant evidence to the contrary.

DETAILS

Allegation:

[redacted] manipulated data to ensure samples passed quality control criteria in 2012 and 2014.

2012 Findings:

In August 2012, [redacted] submitted laboratory data for the [redacted] hazardous waste site that had been manipulated to ensure the data passed quality control criteria. Allegation supported.

2012 Investigative Details:

During July and August 2012, [redacted] was completing the analysis associated with the [redacted] project. In October that year, [redacted] submitted [redacted] final data package to [redacted], who was designated the secondary reviewer. (Exhibit 4)

Following an initial assessment, [redacted] returned the package to [redacted] to have [redacted] make various corrections. [redacted] related that [redacted] was upset and that [redacted] smelled alcohol on [redacted]. This occurred on October 5, 2012. [redacted] reported [redacted] concern of smelling alcohol on [redacted] to [redacted] supervisor at the time, who said [redacted] would handle it. (Exhibit 4)

[redacted] made the corrections to the report and re-submitted to [redacted]. (Exhibit 4)

On October 15, 2012, [redacted] again told [redacted] the data package needed to be changed because it was not accurate. [redacted], and [redacted] met to explain to [redacted] what needed to be fixed. [redacted] was asked to re-process and re-package the data. However, [redacted] was still reluctant and did not believe the data quality would be improved. (Exhibit 4)

At that point, no manipulation was suspected. Due to [redacted] reticence, [redacted] took over and began to re-process and re-package the data [redacted] (Exhibit 4)

During that process, [redacted] accessed the audit trail and found the following:

- [redacted] replaced a failed lab control sample (LCS) / continuing calibration verification (CCV) performed on August 10, 2012 with a second CCV performed on August 20, 2012 that passed quality control criteria.

(Exhibits 4, 5, and 6)

Lab policy and SOP requires chemists to re-run any failed LCS/CCV's, such as the one [redacted] performed on August 10, 2012. This would allow the chemist to determine if the system is out of control and how to fix the issue either through qualification of the data or system maintenance. (Exhibit 7)

Instead, [redacted] deliberately substituted the passing LCS/CCV from August 20, 2012 in place of the failing LCS/CCV on August 10, 2012. The substitution represents a deliberate misrepresentation by [redacted] most likely to conceal that [redacted] sample extraction on August 10, 2012 was inadequate. (Exhibits 4 and 7)

The audit trail also revealed that:

- On September 5, 2012 at 11:35am, [redacted] deliberately changed the static standard in Element (data management software for analytical sampling information) for tetrachloroethene (PCE) from 0.0000431 parts per million (ppm) to 0.0000441 ppm;
- On September 5, 2012 at 11:38am, [redacted] deliberately changed the static standard in Element for PCE from 0.0000441 ppm to 0.0000461 ppm.

(Exhibits 4, 5, and 6)

The static standard for PCE is a certified, documented sample value from an independent lab that is designed to enable the chemist to determine if the instrument is still calibrated and giving proper readings. According to [redacted], there is no reason, whatsoever, to change this value. (Exhibit 7)

On September 5, 2012 [redacted] changed the static standard for PCE in Element two times until it passed the upper control limit. (Exhibit 6)

[redacted] changed the static standard for PCE after waiting nearly one month to evaluate the sampling results. The audit trail shows that [redacted] ran the quality control sample on August 8, 2012 but didn't actually import the results from Chemstation (data acquisition software for each analytical instrument's computer) into Element until August 21, 2012. [redacted] waited an additional two weeks to actually evaluate the data on September 4, 2012. One day later, [redacted] deliberately manipulated the static standard for PCE. Typically, running the quality control sample, importing that data into Element, and evaluating the data should take about fifteen minutes. [redacted] waited nearly 1 month. (Exhibit 6)

[redacted] training records indicate [redacted] was adequately trained in air laboratory procedures and volatiles analysis. (Exhibit 8) Moreover, [redacted] (b) (6), (b) (7)(C), indicated that [redacted] received proper training, was capable of performing this analysis, and had proper supervision during the time of the analysis. (Exhibit 9)

On January 23, 2014, EPA suspended [redacted] for two days as discipline for [redacted] actions related to the (b) (6), (b) (7)(C) sampling. At that time, [redacted] was warned that any further instances of similar behavior can be cause for more disciplinary action, including removal from federal service. (Exhibit 10)

[redacted] Response

[redacted] claims that [redacted] did not deliberately manipulate the data and did not change the static standard values in Element. [redacted] claims that [redacted] was simply trying to determine the level of contamination in [redacted] system. This statement is disingenuous since Chemstation is the software platform where [redacted] could have evaluated contamination. However, the static standard for PCE was changed in the Element software platform. (Exhibit 11)

[redacted] also claims that the April 17, 2013 memorandum documenting [redacted] deliberate data manipulation in August and September 2012 was factually incorrect. (Exhibit 11) While the initial draft did have two minor mistakes, the findings with regard to [redacted] actions were correct. (Exhibit 12)

[redacted] also claims that the lab Standard Operating Procedure (SOP) regarding how to handle failing LCS/CCV is incorrect. However, the lab SOP and policy in EPA SESD are peer-reviewed industry wide practices. (Exhibit 11)

[redacted] claims that [redacted] did not have proper supervision during this incident. However, [redacted] supervisor at the time, (b) (6), (b) (7)(C), claims that [redacted] did have proper supervision and that [redacted] believed [redacted] was properly trained and capable of performing this analysis. (Exhibit 11)

[redacted] claims [redacted] was not adequately trained and that the length of time between [redacted] training and [redacted] first project contributed to the mistakes [redacted] made. [redacted] did not ask [redacted] supervisor for assistance or help during the project. (Exhibit 8)

2014 Findings:

On or about July 21 and July 24, 2014, [redacted] submitted laboratory data for the [redacted] that had been manipulated to ensure the data passed quality control criteria. Allegation supported.

2014 Investigative Details:

Sometime in late June or early July 2014, [redacted], assigned the [redacted] lab project to [redacted]. [redacted] assigned the sampling analysis to [redacted] following [redacted] successful certification of demonstrated proficiency in the SV lab. (Exhibit 13)

On July 21, 2014, [redacted] completed the [redacted] project and submitted it for secondary review to [redacted]. At that time, [redacted] noted something was out of order in the report and notified [redacted], who asked [redacted] to re-run and re-submit the project. (Exhibits 13 and 14)

Initially, [redacted] objected, informing [redacted] that the project and quality control was fine. [redacted] elevated the issue initially to [redacted] and then [redacted], both of whom were subsequently acting [redacted]. [redacted] finally relented after speaking with [redacted] and [redacted], both union representatives, and submitted a corrected data package for review to [redacted] on July 23, 2014. (Exhibit 13)

Immediately, [redacted] discovered a discrepancy in the data package. Specifically, the concentration reported in the continuing calibration verification quantitation report for benzo(b)fluoranthene did not reconcile with the % difference report. This is significant since the % difference value is calculated based on the sample concentration and any differences are not mathematically possible. (Exhibits 14 and 15)

[redacted] findings were brought to the attention of [redacted], who requested an independent review. The independent review, conducted by [redacted], revealed that [redacted] deliberately misrepresented that the continuing calibration verification for benzo(b)fluoranthene passed quality control criteria by submitting two inconsistent reports. (Exhibit 16)

The audit trail recovered from [redacted] instrument's computer indicated that [redacted], after finding that the benzo(b)fluoranthene concentration of 29.43 ng/uL would not pass quality control criteria, then:

1. Deliberately manipulated the peak for benzo(b)fluoranthene, which changed the concentration from 29.43 ng/uL to 31.82 ng/uL;
2. Generated the % difference report indicating a 20.4% difference, which passed quality control criteria;

3. Deliberately re-processed the continuing calibration quantitation report to return the benzo(b)fluoranthene concentration from 31.82 ng/uL to 29.43 ng/uL;

(Exhibit 15)

[redacted] then submitted a data package for review consisting of a quantitation report based on a benzo(b)fluoranthene concentration of 29.43 ng/uL and a % difference report based on a benzo(b)fluoranthene concentration of 31.82 ng/uL. [redacted] actions are generally considered to be an improper lab practice known as "peak juicing." (Exhibits 7 and 15)

On July 24, 2014, [redacted] became aware that [redacted] discovered the discrepancy in [redacted] data package. The audit trail revealed that on July 24, 2014 between 10:01:17 and 10:41:31, [redacted] manually integrated the peak for benzo(b)fluoranthene twenty-four times in an attempt to recreate the exact benzo(b)fluoranthene concentration of 31.82 ng/uL and ultimately conceal the peak juicing. (Exhibits 13, 14, and 15)

For instance, from 10:01:17 to 10:02:35, [redacted] manually integrated benzo(b)fluoranthene nine times with each attempt resulting in a number very close to, but not exactly, 31.82 ng/uL. In order to pass secondary review, [redacted] would have needed to recreate the exact benzo(b)fluoranthene concentration, which is difficult because of the imprecise nature of manual integration. (Exhibit 15)

[redacted] re-processed the quantitation report to reset the benzo(b)fluoranthene concentration back to the original concentration of 29.43 ng/uL. (Exhibit 15)

[redacted] then submitted an addendum to the data package containing the re-processed quantitation report and a qualifier on the data. There was no information related to the manual integrations for benzo(b)fluoranthene. (Exhibit 15)

It is important to note that returning the concentration of benzo(b)fluoranthene to 29.43 ng/uL and qualifying the data would preclude the need for manual integration. This is also what should have been done by [redacted] in the first place. (Exhibit 7)

[redacted] training records indicate [redacted] was adequately trained in this type of laboratory and for this type of analysis. (Exhibit 8) Moreover, [redacted], [redacted], indicated that [redacted] received proper training, was capable of performing this analysis, and had proper supervision during the time of the analysis. (Exhibit 9)

[redacted] Response

[redacted] claims [redacted] manipulated the analytical peaks for benzo(b)fluoranthene based on [redacted] historical knowledge of the difficulty in resolving the various components and peaks of this chemical. [redacted] claimed [redacted] was simply going into the data trying to "see" if the peaks were not resolving. [redacted] also claims that [redacted] had to manipulate the peaks to see if this was the case. (Exhibit 11)

This is inconsistent with the audit trail and lab practice. According to lab chemists, it is not possible to determine if a chemical needs manipulating solely by looking at the peaks from a graph. The only way to determine if manipulation is needed is by generating the % difference report, which would indicate if a chemical did or did not pass. The audit trail indicates [redacted] generated two % difference reports indicating benzo(b)fluoranthene failed prior to manipulation. (Exhibit 11)

[redacted] claims that after the manipulation [redacted] determined there wasn't any problem and that is why [redacted] didn't include the manipulation in the data package. This is inconsistent with the data package [redacted] submitted which contained a % difference report indicating benzo(b)fluoranthene passed quality control criteria based on a manipulated value for benzo(b)fluoranthene. Moreover, [redacted] failed to qualify the data as required in the original data package. (Exhibit 11)

[redacted] training records indicate [redacted] was adequately trained in this type of laboratory and for this type of analysis. (Exhibit 8)

AGENT'S NOTE: Following the 2014 incident, [redacted] re-reviewed the 2012 data and discovered that [redacted] also deliberately manually integrated the peak for PCE, generated a passing % difference report, and then generated a quantitation report to conceal the manual integration exactly similar to [redacted] actions in 2014. The audit trail shows that on August 10, 2012 from 16:10:50 to 16:11:50 [redacted] manually integrated the peak for PCE five times and then immediately re-processed the quantitation report. It is not clear why [redacted] actions were not discovered in 2012. However, [redacted] may have believed that manual integration was not detectable by secondary review. (Exhibits 4 and 17)

Disposition

This Report of Investigation is being issued to (b) (6), (b) (7)(C) for administrative remedies or actions deemed appropriate.

SECTION B – ENTITIES AND INDIVIDUALS

Name: (b) (6), (b) (7)(C)
Title & Company: (b) (6), (b) (7)(C) EPA, Region 4, (b) (6), (b) (7)(C)
Role:
SUBJECT

Business Address: (b) (6), (b) (7)(C)
Business Phone: (b) (6), (b) (7)(C)
EPA Employee: Yes

SECTION C – BACKGROUND

EPA Region 4 SESD

Located in Athens, Georgia, the EPA, Region 4, Science and Ecosystem Support Division (SESD), through its scientific and technical support services, provides a solid foundation for decision making by a wide variety of environmental programs and initiatives. SESD, with its state-of-the-art laboratory facility and its multidisciplinary staff of chemists, biologists, engineers, and other scientists and professionals, serves as the primary provider of scientific and technical expertise and environmental data for EPA Region 4 program offices located in Atlanta, Georgia. (Exhibit 18)

SESD is strongly committed to sound science and quality assurance practices which will produce environmental data of appropriate quality to be used for decision making. (Exhibit 18)

EPA Superfund

The Superfund cleanup process begins with site discovery or notification to EPA of possible releases of hazardous substances. Potential Superfund sites rely on quality data as the basis for a number of subsequent actions including listing on the National Priority List (NPL), remedial investigation / feasibility studies, records of decision, remedial design and action, construction, removal from the NPL, and finally site reuse and redevelopment. Use of faulty data jeopardizes not only the steps in this process, which are costly, but also the ability of EPA and the State agencies to ensure the protection of human health and the environment. (Exhibit 19)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C) .
(b) (6), (b) (7)(C) is on the National Priorities List (NPL) and is contaminated with arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, zinc, and cyanide. There are metals in surface water and sediments of H(b) (6), (b) (7)(C)
is a fishery, people may be exposed by eating contaminated fish. In addition, (b) (6), (b) (7)(C) empties into a drinking water reservoir. There is also a risk that water in the (b) (6), (b) (7)(C) will over-top the bank and acid/metals-laden water will enter the reservoir. (Exhibits 20 and 21)

(b) (6), (b) (7)(C)

(b) (6), (b) (7)(C) . At the time, (b) (6), (b) (7)(C) was being assessed by both EPA and FL Department of Environmental Protection (DEP) for potential inclusion on the NPL. Groundwater and soil contamination from dry cleaning solvents exists at the site. Tetrachloroethene (PCE) is the primary contaminant of concern at dry cleaner sites. (Exhibits 22 and 23)

EPA & Scientific Integrity

Science is the backbone of the EPA's decision-making. The Agency's ability to pursue its mission to protect human health and the environment depends upon the integrity of the science on which it relies. The environmental policies, decisions, guidance, and regulations that impact the lives of all Americans every day must be grounded, at a most fundamental level, in sound, high quality science. When dealing with science, it is the responsibility of every EPA employee to conduct, utilize, and communicate science with honesty, integrity, and transparency, both within and outside the Agency. (Exhibit 24)

Lab Analysis Process

Samples are received by the sample custodian in the custody room and are logged into EPA's data management system, Element. Air samples are transferred to the air lab for preparation and analysis. Semi-Volatile (SV) samples are stored in the custody room cooler until retrieved by the extraction lab. The extraction lab extracts the samples and makes a preparation batch in Element for the samples. The extracts of the samples are placed in the SV lab for analysis by extraction lab personnel. In the air lab the samples are prepared, usually by the primary analyst, and stored in the lab until analysis of the samples. In both the air lab and the SV lab, specific samples are self-assigned to an analyst with coordination by the work-group leader for analysis based on analyst availability and on which instrument the analysis will occur.

In the air lab, the primary analyst readies the instrument for analysis including loading the samples on the auto-sampler, tuning the instrument, calibrating the instrument (or verifying the continuing calibration of the instrument), and analyzing the required quality control (QC) samples.

Following initial calibration of the analyzing instrument, it is necessary for the chemist to continually verify, on a day-to-day basis, that the machine is still calibrated when performing subsequent sampling. The % difference value provides the chemist with knowledge about whether the instrument is within quality control criteria for a range of compounds. Moreover, the % difference value is a function of the continuing calibration verification sample concentration, so discrepancies are not mathematically possible.

If problems occur with any of those items, corrective action must be taken before proceeding with sample analysis. In some cases, corrective action could be applying a qualifier to the sample results, which marks the result as an estimated value with the uncertainty being due to the problems with the quality control measures.

Samples are then analyzed on the instrument and the analysis is recorded using the software, ChemStation. Raw sample and QC data acquired by ChemStation are corrected in the software if necessary and printed for the data package. The corrected raw data is transferred from ChemStation to Element through the local area network and the software, DataTool. The primary analyst makes an analysis batch in Element which will store the transferred sample and QC data together. The primary analyst makes

corrections in Element as needed, including adding the requisite qualifiers of the results and checking to make sure the right control limits are being used by the software.

A draft report is generated from Element which is used to review the sample results that will eventually be reported and which displays the QC criteria. The primary analyst prepares a data package for submittal to the secondary reviewer. The data package has the draft report, data review checklist, copies of logbooks, all the raw data, QC performance reports, Element reports of custody control and batch information, relevant documentation of deviations quality system and the calibration of the instrument.

The secondary reviewer thoroughly reviews the data package for completeness and correctness. The secondary reviewer confirms any manual corrections in the raw data, e.g. manual integrations of peaks, and verifies hand entries in Element including calibration standards. The data review checklist is completed by the secondary analyst.

If necessary, the data package is returned to the primary analyst for corrections. At the discretion of the secondary analyst, they can make minor corrections. Once the data is correct, it is passed on to the data reporter. A cursory review of the data is made and if further correction is necessary, it is made or the data is returned to the analyst for the corrections.

Once the final corrections are made, the reporter (usually the work-group leader) releases the final results generating a final data report from Element and includes it in the final data package with all of the other items mentioned above.

The process in the SV lab is mostly the same. The biggest difference is that the extraction batch QC is analyzed one time and goes with the samples however many times they are analyzed. The LCS is extracted with the field samples and analyzed separately from the CCV, which is not extracted but rather is prepared in the analysis lab. (Exhibit 25)

SECTION D – PROSECUTIVE STATUS

This case was referred for criminal prosecution to the U.S. Attorney's Office, Middle District of Georgia, on October 14, 2014. However, the USAO declined prosecution of 18 USC 1001 (False Statements) on May 29, 2015 because (b) (6), (b) (7)(C), (b) (5) [redacted].

This Report of Investigation is being issued to (b) (6), (b) (7)(C) for administrative remedies or actions deemed appropriate.

EXHIBITS

DESCRIPTION	EXHIBIT
MOI – [redacted] & [redacted], August 5, 2014	1
EPA Order 3120.1 - Appendix	2
MOA – Cost Estimates of [redacted] manipulation	3
MOI – [redacted], August 14, 2014	4
Memorandum, April 17, 2013, Review of the Analytical Chemistry Data Work Order [redacted] Produced by the Analytical Support Branch	5
Audit Trail for [redacted] from September 5, 2012	6
MOI – [redacted], August 13, 2012	7
May 2, 2013 Memorandum, Training Documentation for [redacted]	8
MOI – [redacted], November 18, 2014	9
January 23, 2014 Memorandum, Final Decision Proposed Disciplinary Action	10
MOA – Audio analysis of [redacted] Interview, November 4, 2014	11
MOA – [redacted] comments on [redacted] response	12
MOI – [redacted], August 13, 2014	13
MOI – [redacted], August 20, 2014	14
Memorandum, August 5, 2014, Review of the Analytical Chemistry Data Work Orders [redacted]	15
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